



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

These are some of the thoughts suggested by Prof. Shaler's paper. They are mere "speculations" it is true, but the imagination, under proper control, is a great aid to investigation. If we suspect something we may be led to look for the evidence; and thus learn long before those who wait to stumble on the truth.—
T. MEEHAN.

INFLUENCE OF FOREIGN POLLEN ON THE PARENT PLANT:—Professor Gray adds (Amer. Journ. Science and Arts, Dec., 1872) another to the already numerous instances, says the "Academy," which have placed this mysterious phenomenon beyond dispute. An apple (Spitzbergen) produced a fruit half of which was (at least as to the surface) Spitzenberg, the other half russet. A tree of the latter fruit stood about two hundred yards off. The division into two exactly equal parts is quite unexpected; as the styles and carpels were five, we should have expected the division to be into fifths. Moreover, the action of the pollen in this case is, morphologically, on the calyx, not on the pericarp.

We have been told on excellent authority that apples have been raised in Hopkinton, Mass., which were half sweet and half sour, the line of demarcation being very distinct, so that the distinction in this case was more than skin deep.

[The apple in question was received from the Smithsonian Institution, with an account of its history, and a statement that one or more similar apples had been already received at the Agricultural Department, Washington, and preserved in wax models. Although the external line of demarcation was perfectly distinct, we are bound to add that, on cutting it up and distributing portions among the members of our botanical class, about half the tasters pronounced the morsels to be russet which were taken from the Spitzenberg side of the apple, or *vice versa*. But the fruit was hardly ripe enough.—A. G.]

ZOOLOGY.

A NEW SPECIES OF SPARROW.—Ornithologists will be interested to learn of the recent discovery of a sparrow belonging to the genus *Centronyx*, a genus heretofore represented in collections only by the unique type of *C. Bairdii* collected in 1843 by Audubon. The sparrow in question has been minutely examined and compared with the above mentioned type of *C. Bairdii* by Mr. Robert

Ridgway, of the Smithsonian Institution, who has kindly furnished me with the results of his examination.

The following is a description of the bird. :—

CENTRONYX OCHROCEPHALUS Aiken.—Specific characters :—ground-color of the head deep ochraceous, deepest on top, and gradually fading to buffy-white on the throat; feathers of the crown with broad medial stripes of deep black, these narrower and sparser medially, so as to produce two dusky lateral stripes, and a light medial one. A distinct black spot behind the upper posterior corner of the ear-coverts, a smaller one at the middle of their posterior edge, and two black stripes bordering the light ochraceous maxillary one, a narrow rictal stripe along the lower edge of the ear-coverts, and a heavy "bridle" on each side of the throat.

Lower parts buffy-white, purer posteriorly; jugulum crossed by a series of heavy cuneate streaks of deep black, these continuing backward along the sides, but becoming reddish on the flank. Dorsal feathers hair-brown, with black centres, and broadly bordered, both laterally, and terminally, with creamy-white; rump and upper tail-coverts similar, the feathers with black shaft-streaks. Wings reddish-gray, the feathers blackish centrally. Tail-feathers black, skirted with pale ochre-grayish, this becoming pure white on the outer pair of feathers on each side, the exterior of which are pale gray centrally.

Wing, 3.00; tail, 2.40; culmen, .45; tarsus, .85; middle-toe, .63; lateral toes, .20 shorter; hind-toe, .35.

Habitat.—El Paso County, Colorado.

Though evidently closely related to *C. Bairdii*, this bird seems to differ specifically in quite different proportions, and also apparently, in different coloration, though the type of *C. Bairdii* is in such worn and faded plumage, that its perfect dress cannot be ascertained satisfactorily.

The differences of form and proportion between the two species of *Centronyx* are as follows :—

C. BAIRDII. Tail doubly-rounded, the lateral feather as short as the middle one, and about .20 shorter than the longest; wing, 2.80; tail, 2.10; culmen, .50; tarsus, .90; middle-toe, .60; hind-toe, .40; its claw, .40.

C. OCHROCEPHALUS. Tail deeply emarginated, the lateral feather longest, and .20 longer than the middle; wing, 3.00; tail, 2.40; culmen, .45; tarsus, .85; middle-toe, .63; hind-toe, .35; its claw, .30.

Of the habits of the bird, I can at present say but little; the single specimen obtained, was found on the dry open plains, many miles from timber. Its actions appeared to resemble those of *Coturniculus passerinus*.—C. E. AIKEN, *Fountain, Colorado*.

INSTANCE OF SAGACITY AND AFFECTION IN A DOG.—On the afternoon of January 4th, Mr. F. W. Crosby of this place, while walking along the bank of Clear Creek, observed two dogs. A black Newfoundland dog (male) and a small white dog (female) playing together on the ice in the creek. While Mr. Crosby's attention was diverted for a moment the white dog disappeared from sight,

having fallen through a hole in the ice, and the black dog was working with might and main to make a hole through the ice several feet below where his mate fell in.

The creek at this point is shallow and quite rapid, so the dog was carried down stream but a few feet and lodged against a stone.

Mr. Crosby not realizing then the true condition of things, or that he could be of any assistance to the drowning dog, passed on.

Returning by the same place in about half an hour, he noticed that the black dog had succeeded in making a hole through the ice, had drawn his then dead companion from the water, and stood over her, as if trying to warm the lifeless body. The ice where the dog made the hole was one and one-half inches thick and strong enough to bear a man. The dog worked with such energy as to cut his feet and mouth quite severely.

This occurred about 5 P. M. The next morning the dog was still on the ice walking slowly back and forth near the body of his companion, and he had evidently remained there during the whole night, although it was very cold and stormy. — W. O. C.

THE FOOD OF DIPTERA. — That certain kinds of flies, especially many belonging to the order of Syrphidæ, live to a great extent on the pollen of plants, was first pointed out by Dr. Herm. Müller of Lippstadt (see NATURALIST for July, 1871, p. 390), who described the process by which they accomplish the chewing of the pollen-grains and the severance of the threads by which they are frequently held together, by means of minute denticulations at the end of the proboscis. This statement is in opposition to the views of many entomologists, who hold that, not being provided with mandibles, the Diptera must depend mainly or altogether on fluids for their nourishment; but it has recently been confirmed by the observation of some English naturalists. Mr. A. W. Bennett has examined under the microscope the contents of the stomachs of several Syrphidæ, especially *Eristalis tenax* and *Syrphus arbustorum*, and finds them loaded with pollen-grains belonging to some composite plant, presumably an Aster; and one of the first English entomologists, Mr. Edward Newman, states in the "Entomologist" for January that "*Eristalis* feeds chiefly on pollen, and most of the Syrphidæ follow its example; the common house-fly eats various solids, and masses of these substances may be found in

the stomachs of these Diptera undissolved and unaltered after passing through the entire length of the leathery and extensile proboscis." — A. W. B.

NOTE ON CASSIN'S PYRRHULA.—Ornithologists have generally accepted the *Pyrrhula Cassini* Baird from the Yukon region, Alaska, as a valid species, the essential character consisting in the absence of red on the part of the male, and the elongated white spot on the outer tail feather. In a communication presented at the eighteenth meeting of the German Ornithologists' Association, Dr. Cabanis referred to a *Pyrrhula* from Lake Baikal, having very much the character of *Cassini*; and at a meeting of the society held in Berlin, on the 3d of June, 1872, this determination was re-affirmed by Cabanis, in the strength of three specimens lately received from Baikal precisely like the Alaska species, previously described. The bird is said, indeed, to be quite abundant, and its occurrence in Siberia, therefore, removes the difficulty which was felt in assenting to the existence of a purely American species, of a genus that is eminently characteristic of the Old World.

In the same communication by Dr. Cabanis, it is stated that Cassin's Bulfinch was also to be accounted as a bird of Europe, since reference is made by Wickevoort Crommelin, in the *Archives Neerlandaises*, to a bird, killed in a flock of *Pyrrhula vulgaris* in Nov., 1866, which differed from the rest in having an elongated white spot on the inner edge of the outer tail feathers. (Cabanis' Journal, 1871; 318; & 1872; 315.) — S. F. B.

HYLA PICKERINGII IN WINTER.—Mr. Samuel P. Fowler, of Danvers, Mass., has sent us a beautiful fawn colored specimen of the little spring piper, or Hyla, which he found, on November 29th, embedded in a heap of grass sods in his garden. We know nothing of the winter habits of our Batrachians and every fact of this kind should be put on record.

APPLICATION OF THE DARWINIAN THEORY TO BEES.—Hermann Müller publishes, in the "Transactions of the Natural History Society of the Prussian Rhineland and Westphalia," an elaborate paper of about a hundred pages octavo, under the above caption. We have already given in the NATURALIST the exceedingly interesting paper by this author from the Italian version, with notes by Prof. Delpino. Space only allows us at present to briefly notice

the chief points made in this second longer article. The object of the present memoir is to show "how in the bees a comparison of those peculiarities of organization which have marked them as useful in aiding the bee in seeking flowers, give us a certain clew in seeking for the ancestry of bees, and the branching out of their genealogical tree."

The memoir is divided into six sections, with the following heads:—

"1. Bees differ from the fossorial wasps only through such peculiarities of organization as adapt them for collecting the pollen of plants and making honey.

2. The above stated peculiarities of bees, which adapt them for gathering pollen and making honey, thus bringing about the differences between them and the fossorial wasps, offer but a slightly interrupted series of modifications from those presenting the most striking differences, to those which in their organization scarcely differ from fossorial wasps.

3. The bees have thereby so branched out as independent families from the fossorial wasps, that certain species are circumscribed to the maintenance of their brood upon honey and pollen. When this limitation became a hereditary trait, there began a differentiation of their posterity, and so extensive opportunity for the firm establishment of manifold adaptations for the most advantageous mode of collecting pollen and honey. Numerous breaks in the series of relationships of bees have hereby become established through the adoption of new habits relating to the care of their young.

4. The branching off of the bees from the fossorial wasps, and the division of the family of bees into special branches, have resulted merely from the modifications in the structure of the females. Importance of secondary sexual differences for the recognition of connection by relationship of genera and species. Preliminary view of the same.

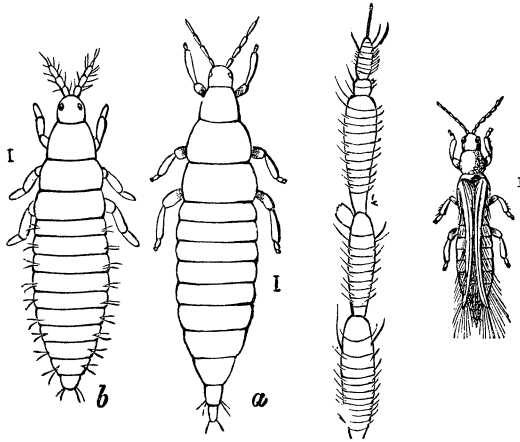
5. Numerical relations of males and females. Qualifications of the males which aid them in seeking the females. Peculiarities of the male antennæ. Why the antennæ are to be regarded as organs of touch and hearing. Peculiar kinds of motions of males.

6. In former times the efforts to effect sexual union brought about secondary sexual peculiarities."

THE THICK-BILLED GUILLEMOT. — A specimen of *Uria arra* Pallas was shot on the Lamoille river, at Fairfax, Vt., about the middle of last December. The bird was nearly full-grown and in good condition. So far as I know this is the first instance of the capture of this bird in New England, except along the shores of the northern portion. — G. H. PERKINS.

INJURIOUS INSECTS.—In the last report (1872) on the “Injurious Insects of Mass.,” made to the Board of Agriculture, some facts are brought out that may interest entomologists as well as farmers.

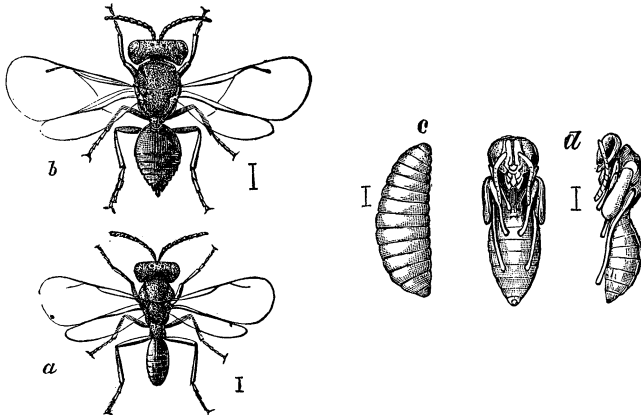
Fig. 41.



Onion Thrips.

A grievous pest to the onion crops of Essex county is the *Limothrips tritici* of Fitch, who found it on the blossoms of wheat and

Fig. 42.



Parasite of Cabbage Caterpillar.

clover. The insect* occurred in all its stages (Fig. 41, male, and end of antenna of male; a, female; b, larva) on the leaves of

* We are indebted to the kindness of Hon. C. L. Flint, Secretary of the Board of Agriculture, for the loan of these cuts, from the Annual Report on Agriculture for 1872.

onions, and by puncturing them, destroyed about \$10,000 worth of this valuable crop in Essex county alone in the summer of 1871.

The parasite of the imported cabbage caterpillar is described and figured (Fig. 42, *a*, male; *b*, female; *c*, larva; *d*, front and side view of pupa). To Mr. A. G. T. Ritchie of Montreal is due the

credit of first making known the history of this invaluable insect. We have raised many of them from the caterpillars in the autumn. It is the *Pteromalus puparum*, and

Tachina larva. has been known to be a

native of Hudson's Bay Territory since 1844, so that it could not have been introduced with the *Pieris rapæ*, its host.

Fig. 43 illustrates a Tachina parasite of the same butterfly found by us at Salem. Its imago is unknown. The cabbage web moth (Fig. 44, with cocoon), which is sometimes so destructive, is no-



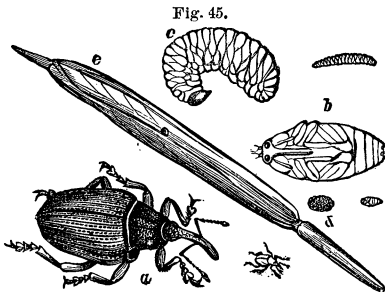
Tachina larva.



Fig. 44.



Cabbage Web Moth.



Radish Weevil.



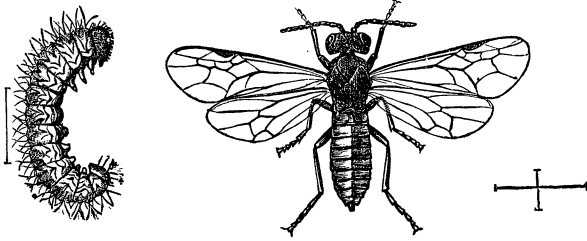
Fig. 46.

ticed; also the radish weevil (Fig. 45 from Curtis, illustrates the different stages of the European *Ceutorhynchus assimilis*). It is thought that an example (Fig. 46) found about fifteen years ago by the writer, on the radish, in Maine, belongs to this species. In Europe it is said to be very destructive.

Another beetle likely to prove annoying, as we have found it in ferneries and gardens, and which in England is said to be a "dreadful pest in gardens," is the weevil, *Otiorhynchus picipes* (Fig. 47).

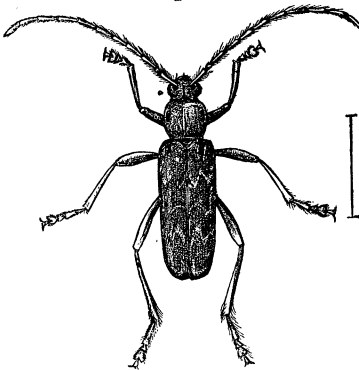
The raspberry saw fly (Fig. 48) is noticed, and the chestnut weevil (Fig. 49), which is thought to be the larva of a species of *Balaninus*, related to *B. nasicus* (Fig. 50).

Fig. 48.



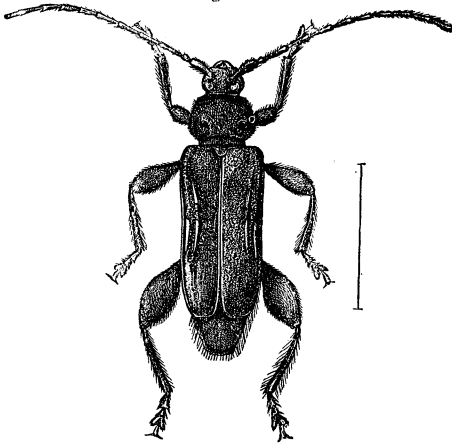
Raspberry Saw Fly.

Fig. 51.



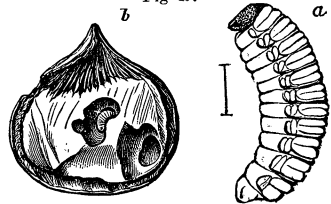
Chestnut Borer.

Fig. 52.



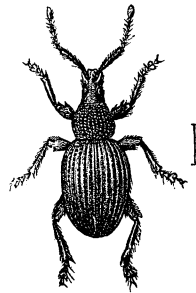
Elm Borer.

Fig. 49.



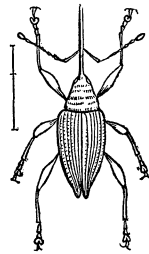
Chestnut Weevil.

Fig. 47.



Garden Weevil.

Fig. 50.



Balaninus.

The chestnut tree has been found to be tenanted by the larva of *Arrhopalus fulminans* (Fig. 51) while a new borer of elm trees has been discovered by Mr. G. D. Smith in the larva of *Physocnemum brevilineum* Say (Fig. 52).—A. S. P.

PROFESSOR COPE'S CAVE CRUSTACEANS.—Dr. Hagen in the last volume of the *NATURALIST*, p. 494, has called attention to the blind crawfish described by Prof. Cope in the article on Wyandotte Cave in the same volume, p. 406, but no one seems to have noticed the peculiar characters of the other crustaceans described in the same paper. As Prof. Cope's article, with its figures, has been copied in "*Nature*" and republished without change in the last "*Annual Report of the Geological Survey of Indiana*," and very likely in other places, it seems quite time these remarkable animals should be noticed.

The "Gammaroid crustacean" from Mammoth Cave (*Stygobromus vitreus* Cope) has a description so uncertain and confused that we wholly fail to comprehend the appellations given to the caudal appendages, without supposing Prof. Cope to have entirely misunderstood their structure and relation in *Niphargus*, and consequently in all gammaroid crustaceans. He speaks of the body in *Niphargus* "terminating in a very long style" and of the "last abdominal limb" as "undivided like that which precedes it." The long style must be *one* of the posterior pair of caudal stylets, and "the last abdominal limb" and "that which precedes it" must refer to the first and second caudal stylets, which are not simple but bi-ramus.

The "unknown crustacean with external egg-pouches," referred to the genus *Cæcidotea*, possesses characters before quite unknown among Isopods. The female is described and figured as a Tetrdecapod-like crustacean with egg-sacks, like those of many Entomosttraca, attached to the extremity of the abdomen, while in the females of all previously known Tetrdecapods, the eggs are carried within lamellæ arising from the bases of the thoracic legs. Its supposed affinities with *Idotea* are still more obscured by the only allusion which is made to the mouth appendages, a figure labelled as "the mandible and palpi of right side," with the explanation that "the outer palpus lies above the lateral plate, and its origin was not seen." Although it is difficult to determine what the appendages referred to really are, it seems to be implied that

the mandible was furnished with a palpus, which is not the case in the family *Idoteidæ* as usually understood. As figured and described, it seems to be a form combining characters distinctive of two primary groups of crustacea, and it is strange Prof. Cope should not have seen in it "the type of a peculiar group of high rank." On account of the interest this little animal must excite, it is to be regretted that it was not more fully described, but it is stated that, "the specimens are in bad condition, having lost their limbs, egg-pouches and the distal portions of their antennæ." This is perhaps the most important sentence in the description. The parasite of the blind fish, a Lernæan, described and figured with egg-sacks similar to those of the species just mentioned, is interesting, not only in itself, but for its possible relations to the *Cæcidotea*. Has not the damaged Isopod been carelessly restored with some of the Lernæan's appendages, instead of having retained them from some Entomostracan progenitor by retardation of development?—S. I. SMITH.

ANTHROPOLOGY.

ANTIQUITY OF MAN IN AMERICA.—In the December number of this journal we made an abstract of a paper printed by the Philadelphia Academy, in which Mr. Berthoud gave an account of the relics of an early race of men. As the geological position of the relics has been questioned, further information is very desirable.

MICROSCOPY.

A DRYING CASE.—Mr. Wm. H. Walmsley has been using for years, in the preparation of his well known microscopical objects, a very convenient and useful drying case. This case is especially useful for hardening balsam mountings, drying tissues, etc. It is made of tin, heated with hot water and well ventilated, capable of drying one hundred specimens at once, and able to retain its heat for eight hours without attention. Microscopists can obtain it from James W. Queen & Co.

AN OBJECT CARRIER.—The object carrier usually furnished with the concentric glass stages is extremely satisfactory for studying mounted specimens, but not equally good for other work. It is unsuitable for a large stage plate, or for a heavy trough or com-